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CLAIMS

1. A carbon baking furnace comprising a refractory lined kiln defining a baking path, further comprising a means for substantially continuously receiving green carbon articles, means for packing said green carbon articles in a sacrificial medium, a means for substantially continuously displacement of the packed carbon articles through said baking path and a means for substantially continuously removing baked carbon articles from the kiln.

2. A carbon baking furnace according to claim 1 wherein said refractory lined kiln comprises a plurality of heating zones.

claim 1
a3. A carbon baking furnace according to ~~either claim 1 or claim 2~~ wherein said refractory lined kiln comprises a first heating zone capable of heating the green carbon article to remove volatile organic compounds and second and subsequent heating zones for baking the carbon articles.

claim 1
a4. A carbon baking furnace according to ~~any one of claims 1 to 3~~ wherein said baking path is substantially linear.

claim 1
a20 *6* 5. A carbon baking furnace according to ~~any one of claims 1 to 4~~ wherein said baking path is substantially vertical.

claim 1
a6 *7* 6. A carbon baking furnace according to ~~any one of claims 1 to 5~~ wherein said sacrificial medium is packing coke having a particle size having a maximum particle size of less than 15mm.

claim 1
a7 *8* 7. A carbon baking furnace according to ~~any one of claims 1 to 6~~ wherein the refractory lined kiln comprises guides to position the carbon articles within the baking path.

claim 1
a30 *9* 8. A carbon baking furnace according to ~~any one of claims 4 to 7~~ wherein the means for

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substantially continuously receiving green carbon articles comprises a conveyor and a hydraulic ram whereby the conveyor positions the green carbon article adjacent to the top of the vertical baking path and the hydraulic ram positions the green carbon article into the top of the baking path.

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a. ^{claim 4} A carbon baking furnace according to ~~any one of claims 4 to 8~~ wherein the means for substantially continuously removing green carbon articles from a substantially vertical baking path comprises a plurality of hydraulic rams and conveyor belt wherein the bottom-most baked carbon article is supported by a hydraulic ram while the adjacent baked carbon article
10 is engaged and supported by a second pair of opposed rams and wherein the bottom-most baked carbon article is subsequently positioned by the first mentioned hydraulic ram onto a conveyor belt.

^{claim 1}
a 10. A carbon baking furnace according to ~~any one of claims 1 to 9~~ wherein the means for
15 packing the green carbon articles in a sacrificial medium comprises a hopper fitted with a nozzle whereby the sacrificial medium is spread over and around the green carbon article.

11. A process for baking carbon articles, said process comprising the steps of substantially continuously loading green carbon articles into a refractory lined kiln, said kiln defining a
20 baking path, packing said green carbon articles in a sacrificial medium, substantially continuously displacing the carbon articles through said baking path and substantially continuously removing baked carbon articles from the kiln.

12. A process for baking carbon articles according to claim 11 wherein the carbon articles
25 are passed through the kiln at a uniform rate.

13. A process for baking carbon articles according to claim 11 wherein the carbon articles are passed through the kiln at a step-wise rate..

^{claim 11}
30 14. A process for baking carbon articles according to ~~any one of claims 11 to 13~~ wherein

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refractory lined kiln operates at equilibrium temperatures.

claim 11
A 15 . A process for baking carbon articles according to ~~any one of claims 11 to 14~~ wherein said baking path is substantially linear.

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claim 11
A 16 . A process for baking carbon articles according to ~~any one of claims 11 to 15~~ wherein said baking path is substantially vertical.

17 . A process for baking carbon articles according claims 16 wherein the substantially
10 continued displacement of the carbon articles is achieved by retarding or braking the movement of the lower or lowest carbon articles thereby exercising control over the rate at which the carbon articles pass down the substantially vertical baking path.

claim 11
A 18 . A process for baking carbon articles according to ~~any one of claims 11 to 17~~ wherein
15 the volatile organic compounds are extracted from the kiln.

claim 11
A 19 . A process for baking carbon articles according to ~~any one of claims 11 to 18~~ wherein said sacrificial medium is packing coke having a particle size having a maximum particle size of less than 15mm.

20.

claim 11
A 20 . A process for baking carbon articles according to ~~any one of claims 11 to 19~~ wherein the refractory lined kiln comprises guides to position the carbon articles within the baking path.

claim 11
A 25 21 . A process for baking carbon articles according to ~~any one of claims 11 to 20~~ wherein the means for substantially continuously receiving green carbon articles comprises a conveyor and a hydraulic ram whereby the conveyor positions the green carbon article adjacent to the top of the vertical baking path and the hydraulic ram positions the green carbon article into the top of the baking path.

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- claim 11*
Q 22. A process for baking carbon articles according to ~~any one of claims 11 to 21~~ wherein the means for substantially continuously removing green carbon articles from a substantially vertical baking path comprises a plurality of hydraulic rams and conveyor belt wherein the bottom-most baked carbon article is supported by a hydraulic ram while the adjacent baked
5 carbon article is engaged and supported by a second pair of opposed rams and wherein the bottom-most baked carbon article is subsequently positioned by the first mentioned hydraulic ram onto a conveyor belt.
- claim 11*
Q 23. A process according to ~~any one of claims 11 to 22~~ wherein the means for packing the
10 green carbon articles in a sacrificial medium comprises a hopper fitted with a nozzle whereby the sacrificial medium is spread over and around the green carbon article.
- claim 11*
Q 24. A baked carbon article produced by a process according to ~~any one of claims 11 to 23~~.
- 15 25. A baked carbon article according to claim 24 wherein said article is a carbon anode.

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